

## STATEMENT OF BASIS

as required by LAC 33:IX.3109, for draft **Louisiana Pollutant Discharge Elimination System Permit No. LA0122921** to discharge to waters of the **State of Louisiana** as per LAC 33:IX.2311.

The **permitting authority** for the Louisiana Pollutant Discharge Elimination System (LPDES) is:

Louisiana Department of Environmental Quality  
Office of Environmental Services  
P. O. Box 4313  
Baton Rouge, Louisiana 70821-4313

**I. THE APPLICANT IS:** Criterion Catalysts & Technologies, L.P.  
(Formerly Southern Ionics Incorporated)  
Port Allen Plant  
1471 Safe Energy Drive  
Port Allen, Louisiana 70767

**II. PREPARED BY:** Paula M. Roberts  
Water Permits Division  
Phone: (225) 219-3086  
E-mail: [paula.roberts@la.gov](mailto:paula.roberts@la.gov)

**DATE PREPARED:** April 1, 2008

**III. PERMIT ACTION:** Proposed issuance of an initial individual Louisiana Pollutant Discharge Elimination System (LPDES) permit for a 5-year term

LPDES application received: December 13, 2006  
Supplemental information to this application was received via email on February 8, 2007 and by submittal on August 8, 2007.  
LPDES Application Addendum received: December 18, 2007 via email and by submittal on

**IV. FACILITY INFORMATION:**

**A. FACILITY TYPE/ACTIVITY** – The applicant operates an alumina powder production facility.

Criterion Catalysts & Technologies purchased this High Purity Alumina (HPA) plant from Southern Ionics Incorporated on June 1, 2006. Criterion proposes to construct and operate a new Port Allen Precipitated Alumina (PAPA) plant which will consist of a new process and will produce a new waste stream and a World Scale Catalyst (WOSCAT) plant which will not produce any process wastewater to be discharged from this site.

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Criterion's Port Allen Plant consists of the existing HPA plant and the proposed PAPA and World Scale Catalyst (WOSCAT) plants. The HPA plant currently manufactures specialty alumina products from recycled alumina metal. Raw aluminum is purified under controlled temperatures and humidity and then separated for product distribution. Bagged recycled aluminum wire or pellets are received by truck and stored in the northeast corner of the process building. The bagged material is then emptied by a forklift into a reactor feed bin which feeds two reactors. In the reactors, dry hexanol is used to digest the metal. The resulting aluminum alkoxide is reacted with ammoniated water to yield a high purity alumina slurry and hexanol. The hexanol is recovered and recycled to the process. The product slurry is then passed through a spray dryer to evaporate the water, hexanol and other impurities from the final product. The final HPA product is stored in silos and loaded into railcars, tank trucks, or super sacks for distribution.

The PAPA plant will convert aluminum sulfate and sodium aluminate feedstock into precipitated alumina powders used in catalyst production. Production of the precipitated alumina powder is an aqueous process consisting of feedstock handling facilities, batch operated stike tanks, a three stage filtration system to wash the alumina solids, and a two-stage effluent treatment system to remove suspended solids. Process wastewaters flow through the wash stages counter-current to the process stream and are collected for treatment. The wastewater filtrate undergoes solids removal, ph adjustment, and polishing prior to discharge. Boiler blowdown, package sanitary wastewater treatment system effluent, and cooling tower blowdown combine with the process wastewaters to discharge via an LPDES-permitted outfall into the Mississippi River. The cooling tower and boiler utilize commercial treatment chemicals supplied by a vendor which typically contain inorganic sodium salts, ortho-and pyro-phosphates and organic carbolxylated polymers as well as bleach solution for biological control.

The World Scale Catalyst (WOSCAT) facility will manufacture specialty catalysts used in the refining of crude oil to produce low sulfur fuels. The primary feed stock for manufacturing WOSCAT catalyst is alumina powder, which will either be conveyed to WOSCAT's alumina bulk solids storage silos from the PAPA plant, or received from off-site via railcars and trucks. Catalyst production at WOSCAT will be an enclosed water consuming process; therefore, no, process wastewater will be generated from the operation.

The HPA facility is currently covered under the Light Commercial General Permit LAG480319. In light of the inclusion of a process outfall, the facility will no longer be eligible for coverage under the Light Commercial General permit once the process outfall begins discharging. Upon issuance of this individual permit, the LAG480319 general permit will be terminated.

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## B. FEE RATE

- a. Fee Rating Facility Type: Minor
- b. Complexity Type: IV
- c. Wastewater Type: III
- d. SIC code: 2819

C. LOCATION – 1471 Safe Energy Drive in Port Allen, West Baton Rouge Parish  
Latitude 30°29'37", Longitude 91°13'15"

## D. Technology Basis – 40 CFR Chapter I, Subchapter N (Effluent Guidelines and Standards) parts 401, 405-415 and 417-471 have been adopted by reference at LAC 33:IX.4903.

Guidelines

Not Applicable

Reference

Not Applicable

Other Sources of Technology Based Limits:

Existing Permits with Similar Outfalls

LDEQ Stormwater Guidance [letter dated June 17, 1987, from J. Dale Givens (LDEQ) to Myron Knudson (EPA)]

Best Professional Judgement

V. **OUTFALL INFORMATION:**Outfall 001

Discharge Type: Process wastewater, utility blowdown water, hydrostatic testing, treated sanitary wastewater and miscellaneous wastewaters (comprised of washdown waters, boiler blowdown, cooling tower blowdown, de-ionization reject water, and contact stormwater)

Treatment: Solids removal and pH adjustment

Location: At the point of discharge from the effluent pipe (Latitude 30°29'32", Longitude 91°13'18")

Flow: 460 GPM

Discharge Route: an effluent pipe, thence into the Mississippi River

Outfall 002

Discharge Type: Non-contact stormwater runoff from the southwest side of the PAPA process building

Treatment: None

Location: At the point of discharge from a regional drainage ditch located alongside the south property line (Latitude 30°29'34", Longitude 91°13'08")

Flow: Intermittent

Discharge Route: ditch, thence into an unnamed parish drainage ditch, thence into Intracoastal Waterway

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Internal Outfall 101

Discharge Type: treated sanitary wastewater

Treatment: two package sanitary treatment units utilizing sedimentation,  
aeration, biological reduction and chlorination

Location: discharges to Outfall 001 (Latitude 30°29'34", Longitude 91°13'13")

Flow: 0.003 MGD

Discharge Route: discharges to Outfall 001

**VI. RECEIVING WATERS**

STREAM (Outfall 001) – effluent pipe thence into the Mississippi River

STREAM (Outfalls 002) - Intracoastal Waterway

BASIN AND SUBSEGMENT (Outfall 001) – Mississippi River, Subsegment No.  
070301

BASIN AND SUBSEGMENT (Outfall 002)- Terrebonne, Subsegment 120109

## DESIGNATED USES – 070301

- a. primary contact recreation
- b. secondary contact recreation
- c. propagation of fish and wildlife
- d. drinking water supply

## DESIGNATED USES – 120109

- a. primary contact recreation
- b. secondary contact recreation
- c. propagation of fish and wildlife

**VII. PROPOSED EFFLUENT LIMITS**

The following limits are proposed for this permit. The basis for these limits is listed in the Tables under the "reference" column.

**OUTFALL 001, continuous discharge of process wastewater (which includes but is not limited to boiler blowdown, and hydrostatic testing wastewater), contact stormwater and treated sanitary wastewater from Internal Outfall 101**

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Parameter	Monthly Avg.	Daily Max	Frequency	Sample Type	Reference
Flow	Report	Report	1/month	Estimate	BPJ;LAC 33:IX.2707.I
COD	200	300	1/month	Grab	BPJ
TOC	---	50 mg/l	1/month	Grab	BPJ
TSS	Report	Report	1/month	Grab	BPJ
NH <sub>3</sub> -N	Report	Report	1/month	Grab	BPJ <sup>2</sup>
Total Iron	Report	Report	1/month	Grab	BPJ <sup>2</sup>
Total Aluminum	Report	Report	1/month	Grab	BPJ <sup>2</sup>
Oil & Grease	---	15 mg/l	1/month	Grab	BPJ; Light Commercial Permit
Chlorides	Report	Report	1/month	Grab	BPJ <sup>2</sup>
Nitrates	Report	Report	1/month	Grab	BPJ <sup>2</sup>
Sulfates	Report	Report	1/month	Grab	BPJ <sup>2</sup>
TRC*1	---	0.2 mg/l	1/month	Grab	BPJ;Light Commercial Permit
pH	6.0 su Min	9.0 su Max	1/month	Grab	BPJ;LAC 33:IX.1113.C.1

(\*1) Limit and monitoring for Total Residual Chlorine (TRC) are required only if chlorine or a chlorine compound is used as an anti-biofouling agent.

**OUTFALL(s) 002, intermittent discharge of non-contact stormwater runoff**

Parameter	Monthly Avg.	Daily Max	Frequency <sup>1</sup>	Sample Type	Reference
Flow	Report	Report	1/quarter	Estimate	LAC 33:IX.2707.I
TOC	---	50 mg/l	1/quarter	Grab	BPJ; LPDES Multi-Sector General Permit
Oil & Grease	---	15 mg/l	1/quarter	Grab	BPJ; LPDES Multi-Sector General Permit
Nitrate plus Nitrite Nitrogen	---	Report	1/quarter	Grab	BPJ <sup>2</sup>
Total Aluminum	---	Report	1/quarter	Grab	BPJ <sup>2</sup>
Total Iron	---	Report	1/quarter	Grab	BPJ <sup>2</sup>
pH	6.0 su Min	9.0 su Max	1/quarter	Grab	BPJ; LAC33:IX.1113.C.1

<sup>1</sup> When discharging.

<sup>2</sup> Based upon the process and the product being manufactured, some parameters are proposed in the permit with a monitor and report requirement due to the possibility of

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this pollutant being found in the facility's effluent. These parameters include: Total Iron, Total Aluminum and Nitrate plus Nitrite Nitrogen which were previously limited in the Multi-Sector General Permit. A monitor and report requirement for Chlorides, Sulfates, Nitrates and Ammonia is being proposed due to the fact that a mixture of aluminum salts will be used in the process.

**INTERNAL OUTFALL 101, treated sanitary wastewater**

Parameter	Monthly Avg.	Weekly Average	Frequency	Sample Type	Reference
Flow	Report	Report	1/6 months	Estimate	BPJ; Similar outfalls
BOD <sub>5</sub>	30 mg/l	45 mg/l	1/6 months	Grab	Previous permit limit; Class I Sanitary General Permit
TSS	30 mg/l	45 mg/l	1/6 months	Grab	Previous permit limit; Class I Sanitary General Permit
Fecal Coliform	200	400	1/6 months	Grab	Previous permit limit; Class I Sanitary General Permit
pH	6.0 su Min	9.0 su Max	1/6 months	Grab	Previous permit limit; Class I Sanitary General Permit

**VIII. COMPLIANCE HISTORY/DMR REVIEW**

Since this is the initial individual permit for this facility, the compliance history will reflect the previous history of the plant as Southern Ionics which had coverage under the Light Commercial General Permit LAG480319 for the High Purity Alumina Plant.

- A. LDEQ records were reviewed for the period from January 2005 through January 2007 and revealed no enforcement actions have been issued to this facility.
- B. A DMR review of the monitoring reports for the period of January 2005 through January 2007 revealed the following effluent violations for Year 2:

Outfall 001-Benchmark Monitoring exceeded for Nitrate plus Nitrite, Total Recoverable Aluminum, and Total Recoverable Iron

Outfall 002-Benchmark Monitoring exceeded for Nitrate plus Nitrite, Total Recoverable Aluminum, and Total Recoverable Iron

Outfall 003-Benchmark Monitoring exceeded for Nitrate plus Nitrite, Total Recoverable Aluminum, and Total Recoverable Iron

- C. The most recent inspection was performed on November 15, 2000. There were no areas of concern.

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**VI. ENDANGERED SPECIES:**

The receiving waterbody, Subsegment No. 070301 of the Mississippi River Basin has been identified by the U. S. Fish and Wildlife Service (FWS) as habitat for the Pallid Sturgeon, which is listed federally as a threatened species. However, this is a permit, for a minor discharge, that will not contain limitations for the substances listed in Section II.2 of the Implementation Strategy. Therefore, consultation with the Service is not required. This strategy was submitted with a letter dated October 24, 2007 from Boggs (FWS) to Brown (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat. Therefore, the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat.

**VII. HISTORIC SITES:**

The discharge will be from an existing facility. LDEQ has consulted with the State Historic Preservation Officer (SHPO) in a letter dated August 2, 2006, to determine whether construction related activities could potentially affect sites or properties on or eligible for listing on National Register of Historic Places. SHPO's response, dated September 6, 2006, indicated that the facility as proposed will have no potential effects.

**XI. TENTATIVE DETERMINATION**

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to reissue a permit for the discharge described in the application.

**VIII. PUBLIC NOTICE:**

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the fact sheet. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper(s) of general circulation  
Department of Environmental Quality Public Notice Mailing List

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### **XIII. TMDL STATUS:**

Subsegment No. 070301 of the Mississippi River Basin is listed on LDEQ's FINAL 2006 305(b)/303(d) Integrated Report dated February 22, 2007 as fully supporting its designated uses. Therefore, there are no impairments of concern and no additional permit limitations included in this permit.

Subsegment No. 120109 of the Terrebonne Basin is listed on LDEQ's FINAL 2006 305(b)/303(d) Integrated Report dated February 22, 2007 as fully supporting its designated uses for primary contact recreation and secondary contact recreation, but not supporting its designated use of fish and wildlife propagation. The impairment listed is Sulfates. A TMDL is projected for Sulfates; however that has yet to be determined. Therefore, due to the nature of the discharge, the parameter Sulfates is proposed in the permit with a Report requirement.

All other TMDLs have been completed for the Terrebonne River Basin and the Department of Environmental Quality reserves the right to impose more stringent discharge limitations and/or additional restrictions in the future to maintain the water quality integrity and the designated uses of the receiving water bodies based upon additional TMDLs and/or water quality studies. The DEQ also reserves the right to modify or revoke and reissue this permit based upon any changes to established TMDLs for this discharge, or to accommodate for pollutant trading provisions in approved TMDL watershed as necessary to achieve compliance with water quality standards.

A reopener clause has been placed in Part II of the permit to allow for more stringent or additional limitations or requirements to be placed in the permit, if needed, as a result of the establishment of any future TMDLs or the proposed TMDL for Sulfates.